Mason City Community Schools
Summer Math Activities
For Students Entering Grade 5

Our fourth graders had a busy year learning new math skills. **Mastery of all these skills is extremely important in order to develop a solid math foundation.** The fifth grade math program will **add onto these fourth grade skills,** so any time spent learning or reinforcing these concepts will be very beneficial for your child. Each year builds upon the previous year's skills in math. Any areas your child has difficulty, you may want to give them additional practice. **Student mastery of the basic math skills is as important to success in future mathematical procedures and reasoning, as learning the alphabet is to reading and writing.**

Directions:

Create a personal Math Journal by stapling several pieces of paper together or use a spiral notebook or binder with paper. Be creative and decorate the cover. Complete the activities on the "June, July, August Chart in your journal., and show all of your work. Once you have completed an activity, have an adult family member initial the box on the calendar.

- Each journal entry should:
  - Have the activity number
  - Have a clear and complete answer that explains your thinking
  - Be neat and organized.

Try to play a board game or card game at least one day each week. Write about the game in your journal. Be sure to title the page with the name of the game. Here are some suggestions of games for you to play: Monopoly, Stratego, Othello, Connect Four, Chess, War, Battleship, Risk, Mancala, Yahtzee and Mastermind.

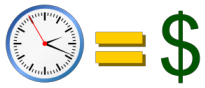
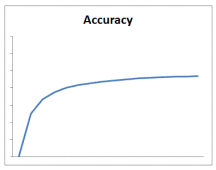
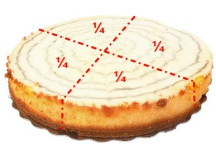
Don't forget to bring your chart to school on the first day of sixth grade. Your new teacher will be so proud of your summer math work!

Happy Thinking!

June, July, and August

Students, remember - show your work and answers in your Math Journal!

Parents/Guardians, please confirm completion of each task by writing your initials in the appropriate box.

Money/Time 	#1 Cut out and paste three grocery store items from a newspaper circular. What would the total cost be?	#2 Plan a meal using a take-out menu. Spend between $14 and $16 dollars.List what you ordered, and the total cost.	#3 You are paid $9.50 an hour for mowing. You mow 3 hours. What do you earn?	#4 If it took you 20 minutes to drive to the theater and 15 minutes to get your ticket and popcorn, and you got in your seat right when the movie started at 5:00 p.m., what time did you leave home?	#5 The movie is 2 hours and 12 minutes long. How many minutes total? The movie cost $6.75. You paid with a $20 bill. How much change will you get?
Estimation 	#6 You need to make hotdogs for 48 people. Hotdogs come in packages of 10. Buns come in packages of 12. How many packages of hotdogs and buns do you need to buy?	#7 If a movie costs $7.25, popcorn costs $2.75 and a drink costs $1.85, ABOUT how much should you bring to the movie theater?	#8 Clip out an ads for 5 items you would like. Estimate the total cost without tax to the nearest dollar.	#9 Estimate how many inches wide a box of cereal is. Then measure it exactly. Was your estimate close?	#10 Make a list of snacks you would want for a sleepover with your friends. Price the items at the grocery store or in newspaper ads. Estimate the cost to the nearest dollar.
Addition/ Subtraction **+ and -**	#11 Matt weighs 120 lbs. If someone else weighs 210 pounds, how much more do they weigh than Matt?	#12 List 10 different combinations of two 2- digit numbers that equal 100.	#13 Create two 4-digit numbers using the following numbers: 3, 5, 7, and 8 so you get the largest possible difference.	Do Activity #1 (attached). Label it in your journal as "Activity 1, or print it out.	#14 Explain how to add or subtract numbers with decimal points. Show what you mean using these problems. **12.1 - 3.45** **16.39 + 2.9**
Fractions 	#15 Find a recipe for a favorite food such as chocolate chip cookies. Write down the fractions and mixed numbers in order from least to greatest.	#16 Draw a tic-tac-toe frame. Put an X in ⅔ of the boxes.	#17 Write your complete first and last name. What fraction of the letters are consonants? Vowels?	#18 Flip a coin 20 times and record the number of heads and tails. What fraction of the tosses were heads? What fraction were tails?	#19 **9/10** of the students in your class will go to Lincoln next year. If there are 30 students in your class. How many will go to Lincoln?

June, July, and August

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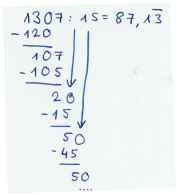
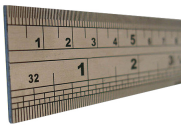
Parents/Guardians, please confirm completion of each task by writing your initials in the appropriate box.

Multiplication 	**# 20 If vowels cost $15 each and consonants cost $50 each, write a word that would cost $230 to build.**	**#21 Count the number of televisions and telephones you have in your home. Tell as much as you can about the number. (odd/even, prime/composite, multiples, etc.)**	**# 22 Write and solve a summer story problem for 15 x 8 = .**	**Do Activity #2 (attached) show it all in your journal.**	**#23 Practice your facts at one of the fact fluency sites listed below.**
Division 	**#24 Stacy's coach told her she should drink 4 gallons of water every week. How many 8 oz glasses of water should she drink each week? (Hint: 1 gallon = 128 oz)**	**#25. If you and three friends go to the Mall and spend $12.40 in all on ice cream, how much will each of you pay? Use a picture to show your work.**	**#26 When we simplify a fraction we divide by the Greatest Common Factor. What's the GCF of 15 and 20? (The largest number that will go in to both.**	**#27 Write and solve a summer story problem for 72 ÷ 8 = .**	**#28 Your summer camp is going to a Bluefish baseball game. If there are 33 kids and 6 kids fit in each van, how many vans do you need to take?**
Measurement 	**#29 Watch the weather report for 5 days, record the daily high and low temperature – for a total of 10 temperatures. Make a Bar Graph.**	**#30 Ask an adult to share an Iowa road map with you. (Or find one online.) What is the scale for that map? What town is about 60 miles away from Mason City?**	**#31 Take a step forward and measure the length of your step from the heel of your front foot to the back heal of your other foot in inches. Go for a walk and keep count of how many steps you take. How many inches did you walk?**	**#32 Measure your height in feet and inches. How many inches tall are you?**	**#33 Write out these conversions, fill in the blanks.** **1 foot = ___ inches** **1 yard = ___ feet** **1 yard = ___ inches** **1 ton = ____ pounds** **1 year = ___ days**
GEOMETRY	**#34 Draw and label: square, pentagon, hexagon, septagon, octagon, nonagon, and decagon. Write the number of sides inside each polygon.**	**#35 Aaron is planting a garden in his backyard. The length of the garden is 6 feet and width is 9 feet. What is the area of the garden? What is the perimeter of the garden?**	**# 36 Using all 7 tangram pieces make ONE of the following shapes: square, rectangle, triangle, parallelogram or trapezoid.**	**#37 Read *Greedy Triangle* by Marilyn Burns. Go on a hexagon scavenger hunt. Where can you find hexagons?**	**Do Activity #3 (attached) show it all in your journal.**

Activity #1:

What's in the Bag?

Ask a family member or friend to put 30 coins (pennies, nickels, dimes, and quarters) into a paper bag without telling you how many of each coins they put in.

Step 1: Without looking into the bag, pull a coin out and record the type of coin in the tally chart below.
Step 2: Return the coin to the bag.
Step 3: Take turns doing this until each of you has done this 20 times.

Pennies	Nickels	Dimes	Quarters
Total:	Total:	Total:	Total:

Step 4: Use the results to make a prediction of how many of each coin are in the bag.

Pennies _____ Nickels _____ Dimes_____ Quarters_____

Explain how you made your prediction

_____

_____

_____

_____

=

Step 5: Look into the bag and count the actual number of pennies, nickels, dimes and quarters to check your prediction. Was your prediction accurate? Explain.

_____

_____

_____

_____

_____

Activity #2:

Take A Survey!

Conduct a survey by asking at least 20 friends and family members a question. (Like what was your favorite thing to eat at school lunch?) Think of your own question, create 5 – 7 responses from which to choose. Record your data in a tally chart.

Step 1: Think of a question you would like to ask for your survey, and the choices you will give.

Step 2: Create a tally sheet.

Step 3: Using the data collected, create a bar graph or pictograph.

Step 4: Write a paragraph about your findings.

Step 5: Write two questions that can be asked using the data.

Activity #3:

How Much Paint?

Summer time is a good time to paint. How many pints of paint will you need to paint a room in your home?

Step 1: Estimate the total area of the walls in a room in your house. (Hint: measure the length of each wall to the nearest foot, measure the height of the room to the nearest foot; multiply the length and height of each wall to find the area)

Wall 1: Length _____ Height _____ Area: _____

Wall 2: Length _____ Height _____ Area: _____

Wall 3: Length _____ Height _____ Area: _____

Wall 4: Length _____ Height _____ Area: _____

Total Area: _____

Step 2: A pint of paint will cover 50 square feet. How many pints of paint will you need to paint the room in your house? Show how you figured it out.

Sunsational Websites

At the time this summer mathematics packet was created, the websites listed were checked by teachers and deemed child appropriate. However, parents should always monitor their child's use of any Internet site.

- **Khan Academy - If your child isn't already signed up, it's free, and is a great site for learning and practicing skills. http://www.khanacademy.org/**

- These free websites will help your child improve his/her accuracy and automaticity in addition, subtraction, multiplication and division facts.
  xtramath.org
  http://www.multiplication.com

- **Create a graph! This page will allow you to insert your information and create any kind of a graph that you want!! http://nces.ed.gov/nceskids/graphing/**

- **Math Cats is a great site with lots of fun games and activities in math.**
  http://www.mathcats.com/contents.html

- **This website will help with multiple math skills interactively.**
  http://www.aplusmath.com/

- **This website has a variety of math activities in an arcade, using the grade level they choose.**
  http://www.funbrain.com/brain/MathBrain/MathBrain.html

- **AAAmath has a variety of math activities!**
  http://www.aaamath.com
  http://www.aaamath.com/B/geo.htm(geometry)
  http://www.aaaknow.com/fra.htm(fractions)

TERMS AND CONVERSIONS TO KNOW IN 5TH GRADE

Edges: All the straight lines of a figure.
Faces: The flat surface of a figure.
Vertex/vertices (plural form): Where two lines meet to form an angle (corner).

Right angle: An angle at 90^0
Acute angle: An angle smaller than a right angle. Less than 90^0
Obtuse angle: An angle larger than a right angle. Greater than 90^0

Perimeter: Add up all the sides. (Adding all lengths of the outer edges together.)
Area: *Area of a square or rectangle = length(l) x width(w) answer is written in "square units."

Perpendicular lines: 2 lines that meet or cross and form a right angle.
Parallel lines: 2 lines that will never cross or touch each other.
Intersecting lines: 2 lines that cross each other.

Mean/Average. Add the set of number values and divide it by how many numbers you have.
Median: Arrange numbers from smallest to largest. Median is the number in the middle? If there are two numbers in the middle, add them together, and divide by 2.
Mode: The number that occurs most often in a set of numbers?
Range: The difference between the smallest and largest numbers in a set. Subtract to find the difference.

Equilateral triangle: All 3 sides and angles have the same measure.
Isosceles triangle: 2 of the sides of a triangle are equal in length.
Scalene triangle: No equal sides.

Conversions to know:
Time:

60 seconds = 1 minute	**24 hours = 1 day**	**52 weeks = 1 year**
60 minutes = 1 hour	**7 days = 1 week**	**12 months = 1 year**

Length:

12 inches = 1 foot	**10 millimeter = 1 centimeter (approx. 2 ½ centimeters ≈ 1 inch)**
3 feet = 1 yard	**100 centimeter = 1 meter (approx. 1 meter ≈1 yard)**

Weight:
16 ounces = 1 pound
2000 pounds = 1 ton

Summer Math Books for 5th Graders!

Title	Author	Strand
Flatland	Abbot, Edwin	Geometry
Mr. Archimedes' Bath	Allen, Pamela	Geometry
Who Sank the Boat?	Allen, Pamela	Geometry
Anno's Magic Seeds	Anno, Mitsumasa	Patterns and Algebra Concepts
Anno's Mysterious Multiplying Jar	Anno, Mitsumasa and Masaichiro Anno	Addition, Subtraction, Multiplicatio and Division
The King's Chessboard	Birch, David	Addition, Subtraction, Multiplicatio and Division
Sea Clocks: The Story of Longitude	Bordon, Louise	Reference Frames
Jim and the Beanstalk	Briggs, Raymond	Data, Chance, and Probability
Spaghetti and Meatballs for All	Burns, Marilyn	Addition, Subtraction, Multiplicatio and Division
Counting on Frank	Clement, Rod	Number and Order
Do You Wanna Bet?	Cushman, Jean	Data, Chance, and Probability
Esio Trot	Dahl, Roald	Data, Chance, and Probability
Fourscore and 7: Investigating Math in American History	Franco, Betsy	Fractions, Decimals, and Percents; Rates and Proportions
A Cloak for the Dreamer	Friedman, Aileen	Geometry
Less Than Nothing is Really Something	Froman, Robert	Addition, Subtraction, Multiplicatio and Division
Speed Mathematics	Handley, Bill	Number and Order
Only One	Harshman, Marc	Fractions, Decimals, and Percents; Rates and Proportions

The Librarian Who Measured the Earth	Lasky, Kathryn	Geometry
Fraction Action	Leedy, Loreen	Fractions, Decimals, and Percents; Rates and Proportions
Gator Pie	Matthews, Louise	Fractions, Decimals, and Percents; Rates and Proportions
Eating Fractions	McMillan, Bruce	Fractions, Decimals, and Percents; Rates and Proportions
12 Ways To Get To 11	Merriam, Eve	Number and Order
Sir Cumference and the Sword in the Cone	Neuschwander, Cindy	Geometry
Sir Cumference and the First Round Table	Neuschwander, Cindy	Geometry
Pi: A Math Adventure	Neuschwander, Cindy	Geometry
Math Talk: Mathematical Ideas in Poems for Two Voices	Pappas, Theoni	Number and Order
A Remainder of One	Pinczes, Elinor J.	Addition, Subtraction, Multiplicatio and Division
One Hundred Hungry Ants	Pinczes, Elinor J.	Addition, Subtraction, Multiplicatio and Division
How Much Is a Million?	Schwartz, David M.	Number and Order
If You Hopped Like a Frog	Schwartz, David M.	Fractions, Decimals, and Percents; Rates and Proportions
Math Curse	Scieska, Jon	Number and Order
The Boy Who Reversed Himself	Sleator, William	Geometry
Longitude	Sobel, Dava	Reference Frames
Grandfather Tang's Story	Tompert, Ann	Geometry
Jumanji	Van Allsburg, Chris	Geometry